



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,261	03/25/2005	Daihachi Shojima	P70511US0	4367
13% 7590 07/10/2008 JACOBSON HOLMAN PLLC 400 SEVENTH STREET N.W. SUITE 600 WASHINGTON, DC 20004				
EXAMINER				
PICKARD, ALISON K				
ART UNIT		PAPER NUMBER		
3676				
MAIL DATE		DELIVERY MODE		
07/10/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/529,261

**Applicant(s)**

SHOJIMA, DAIHACHI

**Examiner**

Alison K. Pickard

**Art Unit**

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5, 6, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5, 6, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (Fig. 7 and spec. pages 1-3) in view of Tanaka.

In figure 7, for example, Applicant discloses a known apparatus for manufacturing a semiconductor device having a packing groove with a seal 51. And Applicant discloses that PTFE is a known material having plasma resistance. However, Applicant does not disclose the plasma seal as required by the claims. Tanaka teaches a plasma resistance seal having improved characteristics due to a laminated structure of a packing material 1 protected by a plasma resistant material 2. Tanaka teaches various cross-sections that provide the benefits of the two materials. Figure 5a or 7a, for example, teach a shape wherein the packing is an o-ring and is covered by an arch shaped plasma seal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of the prior art by using a dual-material structure as taught by Tanaka to provide combined desirable properties of two materials and maintain an effective seal.

3. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winters in view of Havens (4,039,741)

Winters discloses an apparatus for making semiconductor devices a plasma resistant seal 232 in a groove that is shallower than a groove holding packing ring 230. Winters discloses that the plasma seal “preferably” comprises a core and jacket wherein the jacket can comprise PTFE. Since the main function of the plasma seal is to protect the packing 230 from exposure to plasma irradiation, it is considered obvious to make the entire ring from PTFE, which will yield expected results (i.e. the ring 230 will be protected). Winters does not disclose the claimed shape of the plasma seal. Havens teaches forming a seal with a curved/arched cross-section (concave of arch faces groove) to prevent the modulus of elasticity of the material from being exceeded upon compression. This extends the life and use of the seal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the shape of seal 232 to have an arch shape to improve the life of the seal.

***Response to Arguments***

4. Applicant's arguments filed 2-19-08 have been fully considered but they are not persuasive.

Both Winters and Tanaka teach protecting a rubber seal from plasma irradiation using a plasma resistant seal. The seals can be provided in the same or in different grooves. PTFE is a known material that provides plasma resistance. The claims are considered obvious in view of the teachings of the prior art. Using a solid PTFE ring in front of a rubber o-ring (either in the same groove or in a separate groove) would achieve expected results, i.e. the rubber o-ring would be protected from the plasma irradiation.

Tanaka discloses that the laminated structure can be produced by various methods (col. 8, lines 60-61). Thus other methods such as mechanical bonding would be obvious. And, Winters

discloses that the plasma seal is “preferably” formed with a core and jacket. This is considered an option. The main function of the seal is to be plasma resistance. So, forming it of a solid material that achieves this function is considered obvious.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 571-272-7062. The examiner can normally be reached on M-F (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alison K. Pickard/  
Primary Examiner, Art Unit 3676

AP